

REMARKS

In paragraph 5 of the office action, the examiner rejects claims 1, 15, 29 and 43 under 35 U.S.C. 102(e) as being anticipated by Kauffman et al. (US Patent No. 6,332,180).

In a telephone interview with the examiner and his supervisor John Follansbee 2:00 p.m. on May 5, 2004 the applicant respectfully showed that the prior art references did not express or imply any throughput information as shown in the claims. Furthermore, the reference cited did not express or imply conveying throughput information to a partition operating system or using the throughput information to create resource balancing directives.

The examiner agreed to review his citation and in a follow-up telephone interview on May 10, 2004, the examiner stated the finality of the office action would be withdrawn if the applicant restated his argument in an amendment.

Claim 1 reads:

1. A method in a computing system having a first partition including a first operating system and a second partition including a second operating system, the method comprising the steps of:

a) conveying first partition throughput information from said first partition to a partition manager;

b) creating in said partition manager, resource balancing directives said resource balancing directives based on said first partition throughput information; and

c) allocating resources to said first partition by the partition manager according to the resource balancing directives.

The specification supports the claim in Fig. 13, 14 and page 30, lines 14 - page 33 line 12 wherein throughput information ("velocity" metric) derived from I/O packets (page 31 lines 23-24) or CPU utilization (page 31 lines 25-26) of an operating system is used to adjust resources page 31 lines 8-11.

The examiner states in paragraph 5 of the office action in part that "a) conveying first partition throughput information from said first partition to a partition manager" is shown in Kauffman (col 4 lines 50-52 and col 7 lines 14-18). The applicant disagrees. There is no throughput information expressed or implied in the reference.

The examiner further states "b) creating in said partition manager, resource balancing directives said resource balancing directives based on said first partition throughput information" is shown in Kauffman (col 7, lines 14-18 and col 2 lines 30-42). The applicant disagrees. There is no throughput information expressed or implied in the reference.

The applicant respectfully submits therefore that claims 1, 15, 29 and 43 are in condition for allowance, which allowance is requested.

The applicant further respectfully submits that claims 2 - 14, 16 - 28 and 30 - 43 are in condition for allowance as the depend on allowable claims, which allowance is requested.

According to the USPTO's "Examination Guidelines for Computer-related Inventions" (Final version), II. C. Page 4 final paragraph, "Office personnel must rely on the applicant's disclosure to properly determine the meaning of terms used in the claims" Reference Markman v. Westview Instruments, 52 F.3d 967, 980, 34 USPQ2d 1321, 1330 (Fed. Cir.) (in banc), cert. granted, 116 S. Ct. 40 (1995). Therefore, meaning of terms such as "throughput information; resource balancing directives, partition manager; allocating resources and workload manager" of the

present invention must be interpreted according to the present application.

Furthermore, as presented in the applicants previous amendment, in paragraph 5, according to the examiner, "as per claims 1, 15, 29 and 43, Kauffman discloses... a) conveying first partition throughput information from said first partition to a partition manager (col 4 lines 50-52 and col 7 lines 14-18);". The applicant disagrees. The reference to col 4 "This partitioning, which a system manager directs, is a software function; no hardware boundaries are required." discusses a system manager function for assigning hardware to an operations system partition. Kauffman does not expressly teach or imply throughput information of any sort nor conveying information from a partition to a partition manager. Further the reference to col 7 "The console program may be a modification of an existing administrative program or a separate program which interacts with an operation system to control the operation of the preferred embodiment." discusses a "console program" one of which is created for each operating system partition. The console program "does not create any software layers between the running operating systems and the physical hardware" (col 7 lines 19-21). "It is the responsibility of the operating system instance to use the resources appropriately and provide coordination of resource allocation and sharing." (col 7 lines 24-28). Kauffman's console program is not a partition manager of the present invention. It is related to it's own partition and has no responsibility for coordinating resource allocation as shown in the claims.

According to the present application "The partition resource manager task is comprised of cooperation of Workload Manager running in a partition, obtaining throughput information from other workload managers (or throughput information generators appropriate to a specific operating system) in another partition

in communication with a hypervisor, responsible for adjusting partition resource allocation." (page 30 lines 6-12)

The examiner says that Kauffman teaches "creating in said partition manager (Figure 2, element 212 and 217, col 4 lines 50-52), resource balancing directives from said throughput information (col 7, lines 14-17)". The applicant disagrees. The Col 7 reference "The console program may be a modification of an existing administrative program or a separate program which interacts with an operating system to control the operation of the preferred embodiment" does not teach anything about throughput, throughput information or resource balancing directives created therefrom. In fact Kauffman teaches resource allocation is the responsibility of the operating system and not any console program as shown supra, "It is the responsibility of the operating system instance to use the resources appropriately and provide coordination of resource allocation and sharing." (col 7 lines 24-28).

The examiner says that Kauffman teaches "allocating resources to said first partition by the partition manager (col 4, lines 50-52) according to the resource balancing directives (col 7, lines 10-28)." The applicant disagrees. The reference to col 7 does not teach resource balancing directives for allocating resources by a partition manager as shown in the claim. According to Kauffman "It is the responsibility of the operating system instance to use the resources appropriately and provide coordination of resource allocation and sharing." (col 7 lines 24-28). The Kauffman reference does not discuss any sort of directives as shown in the claims.

Kauffman does not expressly teach or imply any of "throughput information; resource balancing directives; creating resource balancing directives or allocating resources according to the resource balancing directives" as shown in the claims.

The applicant therefore submits that claims 1, 15, 29 and 43 are in condition for allowance, which allowance is respectfully requested.

In paragraph 6, the examiner says that as per claims 2, 16 and 30 Kauffman teaches "a workload manager running in said second partition (col 8 lines 45-55)". The applicant disagrees. The reference merely describes Kauffman's partitioning method. there is no worklaod discussed or any sort of workload manager as shown in the claims. The applicant submits that claims 2, 16 and 30 are in condition for allowance, which allowance is respectfully requested.

In paragraph 9, the examiner says "as per claims 9, 23 and 37, Kauffman discloses the network packets are related to first partition (col 34, lines 11-16)." The applicant disagrees. In paragraph 13 the examiner admits that "as per claims 6, 20 and 34, Kauffman fails to expressly teach the information about throughput is obtained by counting network packets related to a a partition." Since Kauffman does not expressly teach claims 6, 20 and 34, they can not be rejected under 102(e) and therefore claims 9, 23 and 37 are allowable as they depend on allowable claims 6, 20 and 34. The applicant submits that claims 9, 23 and 37 are in condition for allowance, which allowance is respectfully requested.

The applicant submits that claims 2-8, 10-22, 24-36 and 38-42 are in condition for allowance as they depend on allowable claims, which allowance is respectfully requested.

In paragraph 11, the examiner rejects claims 5-8, 10-14, 19-22, 24-28, 33-36 and 38-42 under 35 U.S.C. 103(a) as being unpatentable over Kauffman et al. (6,332,180) in view of Mayer et al. (6,233,242). The applicant disagrees. These claims depend on allowable claims and are therefore themselves allowable, which allowance is respectfully requested.

Furthermore, there is no motivation shown to combine Kauffman and Mayer. Mayer is directed to a network switch "Each network generally includes two or more computers... which are coupled together through selected media and various other network devices... The term "network device" generally refers to the computers and their network interface cards as well as various other devices on the network, such as... switches..." (Col 1 lines 66- col 2 line 6). The network switch is non-analogous art to Kauffman (and the present invention) and combining Kauffman with Mayer would only result in a partitioned computer with an I/O switch attached. Such an attachment would only provide network communications paths and would not provide any performance information.

In paragraph 12, the examiner admits that Kauffman fails to teach the information about throughput is obtained by a packet activity counter but references Mayer col 53, lines 50-58 as providing a packet activity counter for throughput information. The counter reference is actually directed to a packet count within a packet that indicates how many "packets or packet pieces (are) in the current sector (memory)". There is no indication the packets are counted for throughput information in the switch but only to determine how much memory is used. This teaches away from the present invention that counts packet activity over time as a measure of activity of a central processing system. In fact, packets are transient entities and would not reside in a central processing system main memory, only in the device level memory.

In paragraph 13 the examiner indicates that Mayer discloses obtaining throughput (col 8, lines 19-21) information by counting network packets associated with partitions (col 53, lines 50-58). The applicant disagrees. The system of Mayer is directed to a network switch, not to a central processing system. There is nothing in the Mayer reference that teaches multiple operating systems or partitions in the network switch. The examiner's

reference to col 8 does not show "obtaining throughput information", it provides a information as to the bandwidth capability of one of it's port rather than any sort of measurement of real time throughput activity to obtain throughput information. The reference to col 53 describes a "sector count" field in the packet that indicates the number of packets or packet pieces in a sector of memory. A sector of Mayer is not analogous to a partition of the present invention. For example, sectors are not assigned to Operating Systems in Mayer.

In paragraph 15, the examiner claims that Mayer teaches packets sent by a partition are counted. The applicant disagrees, Mayer is not a partitioned computing system according to the present invention and the reference doesn't teach counting packets sent but merely counting packets currently in transient storage.

In paragraph 16, the examiner claims that Mayer discloses obtaining throughput information by relating network traffic to a processor utilization over time (col 97 and col 98). The applicant disagrees. The reference of Col 97-98 shows a storage location for controlling the monitoring of memory bandwidth activity. There is nothing in the reference about processor utilization or network traffic according to the present invention or relating the two particularly in a partitioned computer system environment as shown in the claims.

The examiner has not shown any credible reason one of ordinary skill would have combined the inventions of Kauffman and Mayer to obtain the present invention. The examiner suggests that combining them would result in a system that was fault tolerant because "if one operating system fails or goes offline, main server automatically detects the problem and redirects the network traffic to remaining operating system.". The applicant disagrees. Combining the cluster of Kauffman with the network switch of Mayer would merely result in a cluster system with a

network switch. Such a system would not provide any partition management or resource balancing directives and throughput for managing partition resources.

Further, neither Kauffman nor Mayer explicitly or implicitly teach any first partition throughput information used by any partition manager or any workload manager as shown in claims 1-4.

The applicant submits that claims 1-4 as amended are in condition for allowance, which allowance is respectfully requested.

The applicant submits that claims 5-8, 10-14, 19-22, 24-28, 33-36 and 38-42 are in condition for allowance as they depend on allowable amended claims 1, 15, 29 respectively, which allowance is respectfully requested.

It is respectfully submitted that the application is now in condition for allowance, which allowance is respectfully requested.

RESPECTFULLY SUBMITTED

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